$$+\frac{df}{dx}x+\frac{df}{dy}y+\ldots+\frac{df}{dw}w, \tag{25'}$$

which is of the form (25) and we have

$$\begin{aligned} r_u^2 = \Bigg\{ & \frac{df^2}{dx^2}\left[\frac{\alpha^2}{p}\right]+\frac{df}{dx}\cdot\frac{df}{dy}\left[\frac{\alpha\beta}{p}\right]+\ldots+\frac{df}{dx}\cdot\frac{df}{dw}\left[\frac{\alpha\lambda}{p}\right] \\ & +\frac{df}{dx}\cdot\frac{df}{dy}\left[\frac{\alpha\beta}{p}\right]+\frac{df^2}{dy^2}\left[\frac{\beta^2}{p}\right]+\ldots+\frac{df}{dy}\cdot\frac{df}{dw}\left[\frac{\beta\lambda}{p}\right] \\ & + \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \\ & +\frac{df}{dx}\cdot\frac{df}{dw}\left[\frac{\alpha\lambda}{p}\right]+\frac{df}{dy}\cdot\frac{df}{dw}\left[\frac{\beta\lambda}{p}\right]+\ldots+\frac{df^2}{dw^2}\left[\frac{\lambda^2}{p}\right]\Bigg\}r^2. \end{aligned} \tag{26'}$$

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CONTINUATION OF THE NOTE AT P. 57 BY THE EDITOR.—**Substituting for $a$ its value $\frac{\omega^2 mR}{5F}+1$, also substituting for $F$ its value, $m\frac{v^2}{D}$, from (3),** and writing $h$ for $\omega^2 \div v^2$, we have

$$\theta = \frac{R}{r}\varphi - \frac{R}{r}\sqrt{\left(\frac{RDh}{5}\right)}\int\frac{d\varphi}{\sqrt{(\frac{1}{5}RDh+1-\cos\varphi)}};$$

**or, substituting for $\cos\varphi$ its equivalent, $1-2\sin^2\frac{1}{2}\varphi$, dividing the quantity** under the second radical by $\frac{1}{5}RDh$, placing this divisor in the denominator of the first radical and writing $\psi$ for $\frac{1}{2}\varphi$ and $c^2$ for $10 \div RDh$, we get

$$\theta = \frac{R}{r}\varphi - \frac{R}{r}\int\frac{2d\psi}{\sqrt{(1+c^2\sin^2\psi)}}.$$

From (3) we have

$$\theta = \frac{R}{r}\varphi - \frac{R}{r}\omega t,$$

$$\therefore\ t = \frac{2}{\omega}\int\frac{d\psi}{\sqrt{(1+c^2\sin^2\psi)}}. \tag{8}$$

**Substituting for $\sin^2\psi$ its equivalent $1 - \cos^2\psi$, dividing the quantity** under the radical by $1+c^2$, and writing $e^2$ for $c^2 \div (1+c^2)$ we have

$$t = \frac{2}{\omega\sqrt{(1+c^2)}}\int\frac{d\psi}{\sqrt{(1-e^2\cos^2\psi)}}. \tag{9}$$

The foregoing was sent to Mr. Charles H. Kummell, of the U. S. Lake Survey, with the request that he should calculate the numerical value of $t$; and, in response, Mr. Kummell has put the integral in the form

$$t = \int_{\frac{1}{2}\pi-\psi}^{\frac{\pi}{2}}\frac{d\Psi}{\sqrt{(a^2\cos^2\Psi+b^2\sin^2\Psi)}} \tag{10}$$

which is more convenient for numerical calculation, and from which he finds

$$t_\pi = 9^h 05^m 38^s.4.$$

Hence it appears that the ball will pass a point 180° from the initial point, $2^h 54^m 21^s.6$ befor the point $A$ will pass the same point in space.